

# List of All Chemicals

## P *Nerium oleander* (Apocynaceae)

Common name(s)

Oleander

How used

Medicinal

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
16-ANHYDRO-DEACETYL-NERIGOSIDE	Seed	--	--		*
9-D-HYDROXY-CIS-12-OCTADECANOIC-ACID	Seed	--	--		*
ADIGOSIDE	Plant	--	--		*
ADYNERIN	Leaf	--	--		*
<b>Activities (3)</b>					
Antitumor					
Cardiac	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Toxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
ALKALOIDS	Stem	--	20.0	-1.44	*
ALKALOIDS	Leaf	--	50.0	-0.61	*
ALKALOIDS	Flower	--	10.0	-1.47	*
ALPHA-AMYRIN	Plant	--	--		*
<b>Activities (10)</b>					
Analgesic					
Antiedemic	IC43=40 mg/kg ipr rat				
Antiinflammatory	IC71=1,000 ppm orl				
Antinociceptive					
Antitumor					
Antiulcer					
Cytotoxic	50-400				
Gastroprotective					
Hepatoprotective					
Insectifuge					
BETA-SITOSTEROL	Plant	--	--		*
<b>Activities (47)</b>					
Androgenic					
Angiogenic					
Anorexic	Martindale's 28th				
Antiadrenomic	Merck 11th Edition				
Antiandrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.				
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103.				
Anticancer (Cervix)					
Anticancer (Lung)					
Antiedemic	IC54=320 mg/kg orl				
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.				
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Antifertility	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.				
Antigonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.				
Antihyperlipoproteinemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antiinflammatory					
Antileukemic					

Antimutagenic 250 ug/ml	
Antiophidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC44=10 uM	
Antiprogestational	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Antiprostaglandin 30 mg/day/12 wks	
Antiprostatadenomic	Merck 11th Edition
Antiprostatitic 10-20 mg 3 x/day/orl man	
Antipyretic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103.
Antitumor (Cervix)	
Antitumor (Lung)	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in Artemisia annua. Plant Science, 75: 161-165, 1991.
Apoptotic	
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. Phytochemistry, 29(5): 1667-1670, 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.
Caspase-8-Inducer	
Estrogenic	
Febrifuge	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Gonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Hepatoprotective	
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. Journal of Ethnopharmacology, 27: 243-275, 1989.
Hypolipidemic 2-6 g/day	
Pesticide	
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Ulcerogenic 500 mg/kg ipr rat	

BETULIN Leaf -- -- Jim Duke's personal files.

#### Activities (13)

AntiHIV 6.1 uM	
Anticarcinomic	
Antifeedant	
Antiflu	
Antiinflammatory	Recio, M., et al. 1994. Investigations on the Steroidal Anti-Inflammatory Activity of Triterpenoids from <i>Diospyros leucomelas</i> *. Planta Medica, 61: 9.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiviral 6.1 uM	
Aphidifuge	Lugemwa, F.N., Huang, F-Y., Bentley, M.D., Mendel, M.J., and Alford, A.R. 1990. A <i>Heliothis zea</i> Antifeedant from the Abundant Birchbark Triterpene Betulin. J. Agric. Food Chem. 38(2): 493-494.
Cytotoxic 600 ppm	
Cytotoxic 8.6 uM	
Hypolipemic	
Prostaglandin-Synthesis-Inhibitor IC50=119 uM	Huang, C., Tunon, H., Bohlin, L. 1995. Anti-Inflammatory Compounds Isolated from <i>Menyanthes trifoliata</i> L. Yao Hsueh Hsueh Pao, 30(8): 621-626.
Topoisomerase-II-Inhibitor IC50=38.6 uM	

BETULINIC ACID Leaf -- -- Jim Duke's personal files.

#### Activities (22)

Anthelmintic	
AntiHIV EC50=2.0 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
AntiHIV IC50=6.5 ug/ml	
AntiHIV 14.8 uM	
Antibacterial	
Anticancer	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticarcinomic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiedemic	

Antileukemic	
Antimalarial IC50=19-26 ug/ml	
Antimelanomic	New York Times, 3/28/95.
Antinociceptive	
Antiplasmodial IC50=19-26 ug/ml	
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiviral 14.8 uM	
Apoptotic	
Cytotoxic 50-100 ppm	Biosyn. Prod. Cancer Chemotherapy (Petit et al)
Cytotoxic 16.4 uM	
Phospholipase-A2-Inhibitor	
Prostaglandin-Synthesis-Inhibitor 200 ug/ml	Dunstan, C. A., Liu, B., Welch, C. J., Perera, P., Bohlin, L. 1998. Alphitol, a Phenolic Substance from <i>Alphitonia zizyphoides</i> which Inhibits Prostaglandin Biosynthesis in vitro. <i>Phytochemistry</i> , 48(3): 495-497.
Prostaglandin-Synthesis-Inhibitor IC50=101 uM	Huang, C., Tunon, H., Bohlin, L. 1995. Anti-Inflammatory Compounds Isolated from <i>Menyanthes trifoliata</i> L. <i>Yao Hsueh Hsueh Pao</i> , 30(8): 621-626.

CAMPESTEROL	Plant	--	--	--	*
<b>Activities (2)</b>					
Antioxidant IC37=10 uM					
Hypocholesterolemic Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.					
CAOUTCHOUC	Plant	--	490.0	-1.11	*
CAPRIC-ACID	Seed	--	--	--	*
<b>Activities (3)</b>					
Fungicide					
Irritant					
Pesticide					
CAPROIC-ACID	Seed	--	--	--	*
<b>Activities (1)</b>					
Irritant					
CAPRYLIC-ACID	Seed	--	--	--	*
<b>Activities (5)</b>					
Antiseptic					
Candidicide 300 mg/man/12 x/day					
Fungicide					
Irritant					
Pesticide					
CHOLINE	Plant	--	--	--	*
<b>Activities (20)</b>					
Antialzheimeran 5-16 g/man/day					
Antichoreic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.				
Anticirrhotic 6,000 mg/man/day					
Anticystinuric					
Antidementia					
Antidiabetic					
Antidyskinetic 150-200 mg/kg/man/day	Martindale's 28th				
Antihomocysteine					
Antimanic 15-30 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antinociceptive					
Antisteatotic					
Cardiodepressant					
Cerebrotonic					
Cholinergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.				
Hepatoprotective					
Hypotensive					
lloorelaxant					

## Memorigenic

Parasympathomimetic (1/1,000th acetylcholine)

Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman &amp; Hall, New York. 941 pp.

## CORNERNIN

Leaf

--

--

\*

## Activities (2)

Cardiac

Diuretic

## CORTENERIN

Leaf

--

--

\*

## DEACETYLOLEANDRIN

Leaf

--

--

\*

## DIACETYL-NERIGOSIDE

Seed

--

--

\*

## EO

Flower

--

300.0

-0.41

\*

## FAT

Seed

170000.0

294000.0

0.15

\*

## FOLIANDRIN

Leaf

--

--

\*

## Activities (2)

Cardiotonic

Diuretic

## FOLINERIN

Leaf

--

--

\*

## Activities (2)

Cardiac

Vasoconstrictor

## GENTIOBIOSYLOLEANDRIN

Leaf

--

--

\*

## GITOXIGENIN

Flower

--

--

\*

## Activities (1)

Anticarcinomic ED50=2.3

## GLYCOSIDES

Leaf

--

6300.0

-0.84

\*

## GLYCOSIDES

Flower

--

5500.0

\*

## GLYCOSIDES

Stem

--

5000.0

\*

## GLYCOSIDES

Stem Bark

--

9600.0

\*

## HCN

Plant

--

--

\*

## Activities (9)

Antiasthmatic

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Antidote Ihl (=Amyl Nitrite)

Martindale's 29th

Antitussive

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Bronchosedative

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Insecticide

Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Pesticide

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Respirastimulant

Martindale's 29th

Rodenticide

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Vasomotor-Stimulant

## ISOQUERCITRIN

Leaf

--

--

\*

## Activities (22)

ACE-Inhibitor ID50=300 ug/ml rat (24 hr.)

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Aldose-Reductase-Inhibitor

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Antibacterial

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor &amp; Frost, London. 791 pp.

Anticancer

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Antielastase IC50=0.7 ug/ml

Russell, G. B., Phytochemical resources for crop protection, N. Z. J. Technol., 2, 1986, 127-134.

Antifeedant

Russell, G. B., Phytochemical resources for crop protection, N. Z. J. Technol., 2, 1986, 127-134.

Antiinflammatory

Antioxidant 1/4 quercetin	
Antioxidant IC50=9.0 uM	
Antiradicular 1/4 quercetin	
Antitumor	
Antitumor-Promoter	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillarogenic	
Diaphoretic	
Diuretic 10 ppm	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Hypotensive	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Pesticide	
TNF-alpha-Inhibitor	
Topoisomerase-II-Inhibitor 550 ug/ml	Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. <i>Antimicrobial Agents &amp; Chemotherapy</i> , 41: 992-998.

#### KAEMPFEROL-3-RHAMNOGLUCOSIDE

Leaf -- -- \*

#### Activities (4)

Antispasmodic  
Choleretic  
Diuretic  
Purgative

#### LAURIC-ACID

Seed -- -- \*

#### Activities (7)

Antibacterial  
Antioxidant IC71=60  
Antiviral  
COX-1-Inhibitor IC40=100  
COX-2-Inhibitor IC20=100  
Candidicide  
Hypercholesterolemic Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. *CRC Handbook of Lipids in Human Nutrition*. CRC Press. Boca Raton, FL. 233 pp.)

#### LINOLEIC-ACID

Flower -- -- \*

#### Activities (27)

5-Alpha-Reductase-Inhibitor  
AntiMS Economic & Medicinal Plant Research, 6: 189.  
Antiacne  
Antialopanic  
Antianaphylactic Economic & Medicinal Plant Research, 6: 189.  
Antiandrogenic  
Antiarteriosclerotic  
Antiarthritic Economic & Medicinal Plant Research, 6: 189.  
Anticorony Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.  
Antieczemic Economic & Medicinal Plant Research, 6: 189.  
Antifibrinolytic Economic & Medicinal Plant Research, 1: 53.  
Antigranular  
Antihistaminic Economic & Medicinal Plant Research, 6: 189.  
Antiinflammatory IC50=31 uM  
Antileukotriene-D4 IC50=31 uM  
Antimenorrrhagic Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine*. John Bastyr College Publications, Seattle, Washington (Looseleaf).  
Antiprostatic Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine*. John Bastyr College Publications, Seattle, Washington (Looseleaf).  
Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  
Carcinogenic Science News, 146: 421.  
Comedolytic  
Hepatoprotective  
Hypocholesterolemic Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. *CRC Handbook of Lipids in Human Nutrition*. CRC Press. Boca Raton, FL. 233 pp.)  
Immunomodulator Economic & Medicinal Plant Research, 6: 189.  
Insectifuge Jacobson, M., *Glossary of Plant-Derived Insect Deterrents*, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  
Metastatic Science News, 146: 421.

**Propecic**

LINOLENIC-ACID	Flower	--	--	*
NERIANTHIN	Leaf	--	--	*
NERIGOSIDE	Seed	--	--	*
NERIIN	Leaf	--	--	*
<b>Activities (2)</b>				
Cardiac				
Diuretic				
NERITALOSIDE	Leaf	--	--	*
ODOROBIOSIDE	Plant	--	--	*
ODOROSIDE-A	Leaf	--	--	*
ODOROSIDE-H	Leaf	--	--	*
ODOROTRIOSIDE	Plant	--	--	*
OLEAGENIN	Leaf	--	--	*
OLEANDOMYCIN	Plant	--	--	*
<b>Activities (2)</b>				
Antiseptic				
Pesticide				
OLEANDRIN	Leaf	--	--	*
<b>Activities (4)</b>				
Antitumor				
Bradycardic				
Cardiotonic	Merck 11th Edition			
Diuretic	Merck 11th Edition			
OLEANOLIC-ACID	Plant	--	--	*
<b>Activities (64)</b>				
Abortifacient				
AntiHIV IC50=21.8 ug/ml				
AntiHIV EC50=1.7 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomic acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.			
AntiPGE2 IC50=24 uM				
AntiTGF-beta IC50=19-24 uM				
Antiallergic				
Antiarrhythmic 40 mg/kg				
Antiatherosclerotic				
Antibacterial MIC=625-1,250 ug/ml				
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.			
Anticariogenic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Anticomplement IC40-50 0.01 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.			
Anticomplement IC80-90 0.05 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.			
Antiedemic IC36=40 mg/kg ipr rat				
Antifertility				
Antigingivitic MIC=625-1,250 ug/ml				
Antihepatotoxic				
Antihyperlipidemic				
Antiinflammatory 40 mg/kg ipr	Aquino, R., De Feo, V., De Simone, F., Pizza, C.*, and Cirino, G. Plant Metabolites. New Compounds And Anti-Inflammatory Activity Of Uncaria tomentosa. <i>Journal of Natural Products</i> , 54(2): 453-459, 1991.			
Antiischemic 40 mg/kg				
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.			
Antileukotriene IC50=17 uM				

ug/ml

Antinephritic IC50=19-24  
uM

Antioxidant Balanehru, S. and Nagarajan, B. 1992. Intervention of Adriamycin Induced Free Radical Damage. Biochemistry International 28(4): 735-744, 1992.

Antioxidant IC46=10 uM

Antiperiodontic MIC=625-  
1,250 ug/ml

Antiperoxidant IC30=200  
ug/ml

Antiplaque MIC=625-1,250  
ug/ml

Antiplasmodial IC50=70-89  
ug/ml

Antisarcomic

Antiseptic MIC=625-1,250  
ug/ml

Antitumor

Antitumor (Breast) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antitumor (Colon) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antitumor (Kidney) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antitumor (Lung) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antitumor (Pancreas) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antiulcer >carbenoxolone

Antiviral EC50=1.7 ug/ml Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomic acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.

Antiviral IC50=21.8 ug/ml Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomic acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.

Aromatase-Inhibitor

Beta-Blocker

Beta-Glucuronidase-  
Inhibitor ~100 mg/kg

COX-2-Inhibitor IC50=295  
uM/

COX-2-Inhibitor Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from Plantago major, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. J. Nat. Prod., 61(10): 1212-1215.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Cardioprotective 40 mg/kg

Cardiotonic

Cyclooxygenase-Inhibitor

Diuretic Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Elastase-Inhibitor  
IC50=~15 uM

Hepatoprotective Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 211.

Hypolipemic

Hypotensive

Immunomodulator

Leucocytogenic

NF-kB-Inhibitor

Phagocytotic

Piscicide ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Prostaglandin-Synthesis-  
Inhibitor Igs mus

Sedative

Uterotonic

Vasopressor

OLEASIDES	Leaf	--	--	*
OLEIC-ACID	Seed	--	--	*

#### Activities (18)

5-Alpha-Reductase-  
Inhibitor

Allergenic

Alpha-Reductase-  
Inhibitor

Anemiagenic

Antialopercic

Antiandrogenic

Antiinflammatory  
IC50=21 uM

Antileukotriene-D4

Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic 5 ml/man	
Dermatitigenic	
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Merck 11th Edition
Percutaneostimulant	Seki, T., Toeda, C., Kawaguchi, T., Junii, K., Sugibayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. <i>Chem. Pharm. Bull.</i> 38(11): 3086-3089, 1990.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Propecic	

#### PALMITIC-ACID

Seed -- -- \*

#### Activities (13)

5-Alpha-Reductase-Inhibitor	
Antialopeptic	
Antiandrogenic	
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.
Antioxidant IC40=60	
FLavor FEMA 1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hemolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Hypercholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Pesticide	
Propecic	
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

#### PHYSTOSTEROLS

Seed -- 140.0 -0.61 \*

#### Activities (2)

Antiprostatotic	
Hypocholesterolemic	

#### PROTEIN

Seed -- 300000.0 0.59 \*

#### PSEUDOCURAMINE

Plant -- -- \*

#### QUERCETIN

Leaf -- -- \*

#### Activities (176)

11B-HSD-Inhibitor	
5-Lipoxygenase-Inhibitor IC50 ( $\mu$ M)=4	
ATPase-Inhibitor	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Aldehyde-Oxidase-Inhibitor IC70-96=10 $\mu$ M	
Aldose-Reductase-Inhibitor 100 $\mu$ M	
Aldose-Reductase-Inhibitor 4 ug/ml	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Aldose-Reductase-Inhibitor IC50=0.84 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation. <i>Chem Pharm Bull</i> 43(8):1385-1387
Aldose-Reductase-Inhibitor IC50=0.344 $\mu$ M	Mao, X. M., Zhang, J. Q. 1993. Inhibition of Aldose Reductase by Extracts of Chinese Herbal Medicine. <i>Zhongguo Zhongyao Zazhi</i> , 18(10): 623-624.
Allelochemical IC82=1 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Allergenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Analgesic	
AntiCrohn's 400 mg/man/3x/day	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
AntiGTF ID50=120 ug/ml	
AntiHIV	
AntiPMS 500 mg/2x/day/wmn	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiaflatoxin IC50=25 $\mu$ M	
Antiaflatoxin IC50=7.5 ppm	
Antiaggregant IC50=55 $\mu$ M	Economic & Medicinal Plant Research, 5: 333.

Antiaging	
Antiallergic IC50=14 uM	Jim Duke's personal files.
Antialzheimeran	
Antianaphylactic	Meli, R., Autore, G., Di Carlo, G., Capasso, F. Inhibitory Action of Quercetin on Intestinal Transit in Mice. <i>Phytotherapy Research</i> 4(5): 201, 1990.
Antiangiogenic	
Antiarthritic	
Antiasthmatic IC50=14 uM	
Antiatherosclerotic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Anticarcinomic (Breast) IC50=1.5 uM	Medline (post 1990 searches filed in my computer)
Anticariogenic ID50=120 ug/ml	
Anticataract	
Anticolitic 400 mg/man/3x/day	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticomplementary	
Anticystitic 1,000 mg/day/4 weeks	
Antidepressant	
Antidermatitic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antidiabetic	
Antielastase IC50=0.8 ug/ml	
Antiecephalitic	Economic & Medicinal Plant Research, 5: 199.
Antiescherichic	
Antiestrogenic	
Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antifibrosarcomic	
Antiflu	Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Antigastric	Rastitel'nye Resursy, 21: 85.
Antigonadotropic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antihepatotoxic	Joyeux, M., Rolland, A., Fleurentin, J., Mortier, F., and Dorfman, P. 1989. Tert-Butyl Hydroperoxide-Induced Injury in Isolated Rat Hepatocytes: A Model for Studying Anti-Hepatotoxic Crude Drugs. <i>Planta Medica</i> 56(2): 171-173, 1990.
Antiherpetic 48-150 ug/ml	
Antihistaminic IC50=<10 uM	
Antihydrophobic	Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Antihypertensive	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory 20-150 mg/kg	Fitoterapia No.5-1990.
Antileishmanic IC50=64	
Antileukemic IC50=10 uM	Economic & Medicinal Plant Research, 5: 225.
Antileukemic IC50=>10 ug/ml	Life Sciences 55: 1061.
Antileukemic 5.5-60 uM	
Antileukotriene	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antilipoperoxidant IC67=50	
Antimalarial IC50=1-6.4 ug/ml	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.
Antimelanomic	
Antimetastatic	
Antimutagenic ID50=2-5 nM	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antimutagenic ID50=0.62 ug/ml	
Antimyocarditic	Economic & Medicinal Plant Research, 5: 199.
Antinitrosaminic	
Antinociceptive	
Antioxidant IC96=300 ppm	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antioxidant ED50=2.3 uM	Seidel, V., Verholle, M., Malard, Y., Tillequin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98.
Antioxidant 4.7 x Vit. E	
Antioxidant IC47=10 uM	
Antipancreatic	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Antiperiodontal	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiperistaltic	
Antipermeability	
Antiperoxidant	<i>Planta Medica</i> , 57: A110, 1991.

Antiplate	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiplasmodial IC50=13-64	
Antipodriac	
Antipolio	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiproliferant 10 nM	
Antiprostanoid	
Antiprostatic	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antipsoriac	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiradicular IC50=4.6 uM	Planta Medica, 56(6): 695, 1990.
Antispasmodic	
Antistreptococcic ID50=120 ug/ml	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithrombic	
Antitrypanosomic IC50=13	
Antitumor 10 uM	
Antitumor (Bladder)	
Antitumor (Breast)	
Antitumor (Colon)	
Antitumor (Lung)	
Antitumor (Ovary)	
Antitumor (Skin) 20 uM	
Antitumor-Promoter	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer	
Antiviral IC50=10 uM	Economic & Medicinal Plant Research, 5: 225.
Antiviral 48-150 ug/ml	Amoros, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. J. of Natural Products 55(12):1732-1740, 1992.
Apoptotic 20-60 uM	
Bacteristat 10 mg/ml	
Bradycardiac	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
COMT-Inhibitor	
COX-2-Inhibitor <40 uM	
Calmodulin-Antagonist	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Capillaroprotective	Merck 11th Edition
Carcinogenic 40,000 ppm (diet) mus	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Catabolic	
Copper-Chelator	
Cyclooxygenase-Inhibitor	
Cytochrome-P450-1A2-Inhibitor	
Cytotoxic ED50=70 ug/ml	Matsukawa, Y., et al. The Effect of Quercetin and Other Flavonoids on Cell Cycle Progression and Growth of Human Gastric Cancer Cells. Planta Medica, 56(6): 677, 1990.
Cytotoxic IC82=100 ug/ml	Planta Medica, 57: A113, 1991.
Deiodinase-Inhibitor	Jim Duke's personal files.
Diaphoretic?	Lawrence Review of Natural Products, Dec-90.
Differentiator 5.5 uM	
Estrogenic 10% genistein	
Fungicide	
Glucosyl-Transferase-Inhibitor ID50=120 ug/ml	
HIV-RT-Inhibitor IC50=<1 ug/ml	Nakane, H., Fukushima, M., and Ono*, K. Differential Inhibition Of Reverse Transcriptase And Various DNA Polymerases By Digallic Acid And Its Derivatives. Journal of Natural Products, 53(5): 1234-1240, 1990.
Hemostat	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Hepatomagenic 5,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Hepatoprotective	
Hypoglycemic 100 mg/kg oral rat	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. Journal of Ethnopharmacology, 27: 243-275, 1989.
Inotropic	
Insulinogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Juvabional	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Larvistat 8,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Lipoxygenase-Inhibitor IC11=1.25 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Lipoxygenase-Inhibitor IC50=0.1-5 uM	

MMP-9-Inhibitor	20 uM
Mast-Cell-Stabilizer	
Metal-Chelator (Copper)	Seidel, V., Verholle, M., Malard, Y., Tillequin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98.
Metalloproteinase-Inhibitor	IC50=>42 uM
Mutagenic	
NADH-Oxidase-Inhibitor	
NEP-Inhibitor	IC50=>42 uM
NF-kB-Inhibitor	
NO-Inhibitor	IC>50=125 uM
NO-Inhibitor	IC50=20 uM
NO-Synthase-Inhibitor	50 uM
Neuroprotective	5-25 uM
Ornithine-Decarboxylase-Inhibitor	<10 uM
P450-Inducer	5 uM Father Nature's Farmacy: The aggregate of all these three-letter citations.
P450-Inhibitor	50-100 uM Father Nature's Farmacy: The aggregate of all these three-letter citations.
PGE2-Inhibitor	
PTK-Inhibitor	0.4-24 uM
Pesticide	
Phospholipase-Inhibitor	
Plasmodicide	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Proliferant	
Prostaglandin-Synthesis-Inhibitor	40 ug/ml Ibewuike, J. C., Ogungbamila, F. O., Ogundaini, A. O., Okeke, I. N., Bohlin, L. 1997. Antiinflammatory and Antibacterial Activities of C-methylflavonol from <i>Pilosostigma thonningii</i> . <i>Phytotherapy Research</i> , 11(4): 281-284.
Protein-Kinase-C-Inhibitor	Naim, M., Zehavi, U., Nagy, S., and Rouseff, R.L. Hydroxycinnamic Acids as Off-Flavor Precursors in Citrus Fruits and Their Products. Phenolic Compounds in Food and Their Effects on Health, Ch.14.
Quinone-Reductase-Inducer	6 uM Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In Vitro by Flavonoids. <i>Cancer Lett.</i> , 120 (2): 213-216.
Quinone-Reductase-Inducer	13 uM
TNF-alpha-Inhibitor	IC50=3.11 uM
Teratologic	
Topoisomerase-I-Inhibitor	IC50=12.8 ug/ml
Topoisomerase-I-Inhibitor	IC50=42 uM
Topoisomerase-II-Inhibitor	IC50=1-6.9 ug/ml
Topoisomerase-II-Inhibitor	IC50=23-40 uM
Tumorigenic	0.1% diet orl rat/yr Jim Duke's personal files.
Tyrosinase-Inhibitor	ID50=70 uM
Tyrosine-Kinase-Inhibitor	Economic & Medicinal Plant Research, 6: 170.
VEGF-Inhibitor	
Vasodilator	
Xanthine-Oxidase-Inhibitor	IC50=>0.4 ug/ml Chem. & Pharm. Bull. 38: 1772.
Xanthine-Oxidase-Inhibitor	IC50=10.6 ug/ml
Xanthine-Oxidase-Inhibitor	3.1 uM
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
iNOS-Inhibitor	IC50=20 uM

#### QUERCETIN-3-RHAMNOGLUCOSIDE

Leaf -- -- \*

#### QUERCITRIN

Leaf -- -- \*

#### Activities (44)

ACE-Inhibitor IC50=0.67 mM/

Aldose-Reductase-Inhibitor IC50=2 uM Terashima, S., Shimizu, M., Nakayama, H., Ishikura, M., et al. 1990. Studies on Aldose Reductase Inhibitors from Medicinal Plant of 'Sinfito,' *Potentilla candicans*, and Further Synthesis of Their Related Compounds. *Chem. Pharm. Bull.* 38(10):2733-2736, 1990

Aldose-Reductase-Inhibitor IC55=0.15 uM

Aldose-Reductase-Inhibitor 0.1-100 uM

Aldose-Reductase-Inhibitor 0.5-4 ug/ml

rat  
Aldose-Reductase-Inhibitor IC55=0.1 uM

Antiarrhythmic

Antibacterial Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

Anticataract

Antiedemic Huang, K. C. 1993. *The Pharmacology of Chinese Herbs.* CRC Press, Boca Raton, FL 388 pp.Antifeedant Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, *Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology*, v. 4, Oryx Press, Phoenix, 1989, 267pp.

Antiflu

Antihemorrhagic Leung, A.Y., *Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics*, John Wiley & Sons, New York, 1980.Antihemorrhagic Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

Antihepatotoxic

Antiherpetic Economic &amp; Medicinal Plant Research, 5: 198.

Antiinflammatory Huang, K. C. 1993. *The Pharmacology of Chinese Herbs.* CRC Press, Boca Raton, FL 388 pp.

Antimutagenic ID50=2-5 nM Phenolic Compounds in Food and Their Effects on Health. Antioxidants &amp; Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.

Antioxidant IC50=120 uM

Antipurpuric

Antispasmodic

Antistaphylococcal 0.41%

Antithrombogenic

Antitumor

Antiulcer Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

Antiviral

CNS-Depressant

Cancer-Preventive Stitt, P. A. *Why George Should Eat Broccoli.* Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Cardiotonic

Choleretic Leung, A. Y. and Foster, S. 1995. *Encyclopedia of Common Natural Ingredients* 2nd Ed. John Wiley & Sons, New York. 649 pp.Cyclooxygenase-Aktivator 200 uM Hansel, R., Keller, K., Rimpler, H., and Schneider, G., eds. 1992. *Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D),* 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

Detoxicant

Diuretic Leung, A. Y. and Foster, S. 1995. *Encyclopedia of Common Natural Ingredients* 2nd Ed. John Wiley & Sons, New York. 649 pp.

Dye

Hemostat Huang, K. C. 1993. *The Pharmacology of Chinese Herbs.* CRC Press, Boca Raton, FL 388 pp.

Merck 11th Edition

Hemostat Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

Hepatotonic

Hypoglycemic Economic &amp; Medicinal Plant Research, 6: 189.

Hypotensive

Insectiphile Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

MAO-A-Inhibitor

MAO-Inhibitor

Paralytic

Pesticide

Vasopressor

---

ROSAGININ

Bark

--

--

\*

## RUTIN

Leaf

--

--

\*

---

**Activities (87)**

5-HT-Inhibitor

Aldehyde-Oxidase-Inhibitor IC27-52=10 uM

Aldose-Reductase-Inhibitor 100 uM

Aldose-Reductase-Inhibitor 4 ug/ml Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. *Sankyo Kenkyusho Nempo*, 43: 99-110.

Allelochemical

AntiCVI 270 mg/man/day

Antiaggregant ED50=33 nmol/kg iv

Antiallergic

Antiapoplectic

Antiatherogenic

Antiatherosclerotic

Antibacterial Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

Anticancer

Anticapillary-Fragility 20- Merck 7th Ed.

Anticataract	
Anticlastogen	
Anticonvulsant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antidementia	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Antidermatitic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.
Antidiabetic	Jin, G-Z., Yamagata, Y., and Tomita, K-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990.
Antiedemic 270 mg/day orl man	
Antierythemic	
Antifeedant	
Antiglaucomic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antihematuric	
Antihemorrhoidal	
Antihepatotoxic	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Antiherpetic	Economic & Medicinal Plant Research, 5: 198.
Antihistaminic	
Antihypertensive	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory 20 mg/kg	
Antimalarial IC50=>100 ug/ml	Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. <i>Journal of Ethnopharmacology</i> , 15: 201-209, 1986.
Antimelanomic	
Antimetastatic	
Antimutagenic ID50=2-5 nM	
Antinephritic	
Antinociceptive	
Antioxidant IC28=30 ppm	
Antioxidant IC50=120 uM	
Antioxidant IC54=10 uM	
Antiperoxidant IC50=10- 20 uM	
Antiplatelet	
Antiproliferant 50-75 uM/l	
Antiprotozoal	
Antipurpuric	
Antiradicular 9 x quercetin	
Antispasmodic	
Antisunburn	
Antithrombogenic EC50=500 nM	
Antithyroid IC50=68 uM	
Antitrypanosomic 100 mg/kg	Planta Medica, 57: A44, 1991.
Antitumor	
Antitumor-Promoter	
Antiulcer	
Antivaricose	
Antiviral	
Apoptotic 75 uM/l	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillaroprotective	Merck 11th Edition
Catabolic	
Chemopreventive	
Cytoprotective IC50=3 uM	
Estrogenic?	Economic & Medicinal Plant Research, 6: 189.
Hemostat	
Hepatomagenic 20,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. <i>Antioxidants &amp; Cancer Prevention</i> . Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507 ACS, Washington 402 pp.
Hepatoprotective 20 mg/kg rat	
Hypocholesterolemic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Hypotensive	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Immunomodulator	
Insecticide	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Juvabional	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat IC95=4,000- 8,000 ppm diet	Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Linoxvenase-Inhibitor	Oszmianski, I. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. I. Aaric. <i>Food Chem.</i> 38: 688-690.

Mutagenic	Economic & Medicinal Plant Research, 6: 189.
Myoprotective	
Myorelaxant	Economic & Medicinal Plant Research, 6: 189.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
PAF-Inhibitor	
Pesticide	
Protisticide	
Radioprotective	
Sunscreen	
Topoisomerase-II-Inhibitor IC50=1 ug/ml	Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. <i>Antimicrobial Agents &amp; Chemotherapy</i> , 41: 992-998.
Vasodilator	
Vasopressor	
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

STEARIC-ACID	Flower	--	--	*
<b>Activities (8)</b>				
5-Alpha-Reductase-Inhibitor				
Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
FLavor FEMA 2-4,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)			
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Propecic				
Suppository	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

STIGMASTEROL	Plant	--	--	*
<b>Activities (12)</b>				
Antihepatotoxic				
Antiinflammatory	Lawrence Review of Natural Products, 1995			
Antinociceptive				
Antiphidic 2.3 mg ipr mus	Economic & Medicinal Plant Research, 5: 363.			
Antioxidant IC33=10 uM				
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.			
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Estrogenic				
Hypocholesterolemic	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.			
Ovulant				
Sedative				

STROSPESIDE	Leaf	--	--	*
<b>Activities (1)</b>				
Cardiac				

UREHITOXIN	Leaf	--	--	*
URSOLIC-ACID	Plant	--	43000.0	1.26

Activities (89)				
Analgesic				
AntiEBV	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.			
AntiHIV EC50=2.0 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.			
AntiHIV IC50=6.5 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.			
AntiHIV IC85=18 ug/ml				
AntiHIV 6.7 uM				
AntiTGF-beta IC50=6-7.5 uM				

Antiarrhythmic	
Antiarthritic	Planta Medica, 57: A56, 1991.
Antibacterial	
Anticancer	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Anticancer (Colon)	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Anticariogenic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticholestatic 28-100 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Anticomplement IC100 0.1 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Anticomplement IC80-90 0.05 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antidiabetic	Chemical Constituents of Oriental Herbs (3 diff. books)
Antiedemic	
Antiescherichic	
Antifibrosarcomic IC80=10 uM	
Antihepatotoxic 5-20 mg/kg ipr	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antihistaminic	Tsuruga, T., Chun, Y.-T., Ebizuka, Y., and Sankawa, U. 1991. Biologically Active Constituents of <i>Melaleuca leucadendron</i> : Inhibitors of Induced Histamine Release from Rat Mast Cells. <i>Chem. Pharm. Bull.</i> 39(12): 3276-3278, 1991.
Antihyperlipidemic	
Antiinflammatory 1/3 indomethacin	
Antiinflammatory IC24=500 mg/kg	
Antileishmanic ED50=20 uM	
Antileukemic IC50=2.5-17.8 ug/ml	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Antimalarial IC50=28-37 ug/ml	
Antimetastatic IC80=10 uM	
Antimutagenic IC57-80=80 mg/kg	
Antinephritic IC50=6-7.5 uM	
Antiobesity?	<i>Internat. J. Oriental Med.</i> 16: 4.
Antioxidant IC50=10 uM	
Antiperioxidant IC35=200 ug/ml	
Antiplasmodial IC50=28-37 ug/ml	
Antiproliferative IC50=15-20 uM	
Antistaphylococcal	
Antithromboxane IC50=50 uM	
Antitrypanosomal	
Antitumor	<i>Cancer Research</i> , 54: 701, 1994.
Antitumor (Breast) 0.5% diet	
Antitumor (Breast) IC50=15-20 uM	
Antitumor (Cervix)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Colon)	
Antitumor (Lung)	
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Stomach) IC50=15-20 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor-Promoter	<i>Planta Medica</i> , 57: A56, 1991.
Antiulcer	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antiviral IC85=18 ug/ml	
Aromatase-Inhibitor	
Beta-Blocker	
Beta-Glucuronidase-Inhibitor ~100 mg/kg	
CNS-Depressant	
COX-2-Inhibitor IC50=130	

Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Cardioprotective	
Cardiotonic	
Choleretic 5-20 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Cyclooxygenase-Inhibitor	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Cytotoxic 50 ppm	
Cytotoxic ED50=3.75 ug/ml	
Cytotoxic 7.2 uM	
Diuretic	
Elastase-Inhibitor	
IC50=-15 uM	
Hepatoprotective 1-100 ug/ml	
Hepatoprotective 10 mg/kg	
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypotensive	
Immunomodulator	
Leucocytogenic	
Lipoxygenase-Inhibitor	
IC50=0.18 mM	
MMP-9-Inhibitor	IC80=10 uM
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Piscicide	
Potassium-Sparing 3 mg/rat	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
Protease-Inhibitor	
IC85=18 ug/ml	
Protisticide	Chemical Express, 7: 285, 1992.
Quinone-Reductase-Inducer 5 ug/ml	Lee, S. K., Song, Y., Mata-Greenwood, E., Kelloff, G. J., Steele, V. E., Pezzuto, J. M. 1999. Modulation of in vitro Biomarkers of the Carcinogenic Process by Chémopreventive Agents. <i>Anticancer Res.</i> , 19: 35-44.
Sodium-Sparing 3 mg/rat	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
TOPO-2-Inhibitor	
Trypanocide	
Vasopressor	

#### UZARIGENIN

Flower

--

--

\*

#### Activities (2)

Antitumor  
Cytotoxic